

METHODS OF SAMPLING AND TESTING
MT 309-04
METHOD OF TEST FOR
REDUCING SAMPLES OF HOT MIX ASPHALT TO TESTING SIZE
(Modified WAQTC TM 5)

1 Scope:

1. This method covers the procedure for reducing samples of Hot Mix Asphalt (HMA). The samples are to be taken according to MT-303 and the increments placed in an agency approved container. The sample is to be representative of the average of the HMA being produced. The field sample when reduced once should yield a sample of sufficient mass that a quarter of the field sample will meet the testing requirements. The initial reduction of the field sample should be accomplished as close as possible to the point of sampling, to avoid excessive cooling of the sample. The further reduction to test size may be done at this time or at another time and location as necessary.

2 Referenced Documents:

- 2.1 *MT Manual:*
MT-303 Sampling Bituminous Paving Mixtures
- WAQTC:*
TM 5

3 Apparatus:

- 3.1 *Oven* – The oven shall be capable of maintaining compaction temperature range.
- 3.2 *Splitting Surface* – A non-stick surface such as metal, paper, canvas blanket or heat-resistant plastic.
- 3.3 *Miscellaneous equipment* – Flat-bottomed scoop, broom or brush, large spatulas, trowels, metal straight edge or 12 in. dry wall taping knife, sheet metal quartering splitter, hot plate, heat resistant gloves or mittens, pans, buckets and cans.

3 Sample Preparation:

- 3.1 The sample must be warm enough to separate. If not, warm in an oven until it is sufficiently soft to mix and separate easily.

4 Procedure:

- 4.1 *Initial Reduction of Large Field Samples:*
- 4.1.1 Heat the trowel(s), spatula(s), and splitting apparatus to approximately 110°C (230°F).
- 4.1.2 Place the sample on a hard, clean, non-stick, level surface where there will be neither loss of material nor the accidental addition of foreign material. The surface may be covered with a canvas blanket, heavy paper or other suitable material. Remove the sample from the agency approved container by dumping into a conical pile.
- 4.1.3 Mix the material thoroughly by turning the entire sample over four times. With the last turning, form the entire sample into a conical pile.

Note 1 – Mixing may be accomplished by turning the pile with a heated spatula or by rolling the material over with paper or other material used for the rolling surface. To minimize segregation with lean mixes or mixes with aggregate larger than ¾" (19mm), re-mixing the sample is not recommended.

4 Procedure: (continued)

- 4.1.4** Flatten the conical pile to a uniform thickness and diameter by pressing down with a hot spatula or trowel. The diameter should be four to eight times the thickness.
- 4.1.5** Divide the flattened pile into four approximately equal quarters with a heated spatula, trowel, flat metal plate, or sheet metal quartering splitter.
- 4.1.6** With the quartering device in place remove all the material from each quarter. If needed for additional testing the material should be placed in an agency approved container for storage for shipment.

Note 2 – Pay particular attention that excessive amounts of material is not left on the splitting surface or splitting equipment.

- 4.1.7** When the further reduction of the HMA is to be done at this time discard all material residue from the other quarters and proceed according to Sec. 5.2.

5 Reducing Samples to Test Size:

- 5.1** On a hard, clean, non-stick, level surface where there will be neither loss of material nor the accidental addition of foreign material, cover the surface with either a canvas blanket, heavy paper, or other suitable material. Remove the sample from the container by dumping into a conical pile.
- 5.2** Mix the sample thoroughly by turning the entire sample over four times. Alternately lift each corner of the canvas or paper and pull it over the sample diagonally toward the opposite corner causing the material to be rolled. With the last turning, lift both opposite corners to form a conical pile.
- 5.3** Flatten the conical pile to a uniform thickness and diameter by pressing down with a hot spatula or trowel. The diameter should be four to eight times the thickness.
- 5.4** Quarter the material using a quartering device or straightedge.
- 5.5** With the quartering device in place, using a straightedge (taping knife), slice through the quarter of the HMA from the apex of the quarter to the outer edge. Pull or drag the material from the quarter holding one edge of the straightedge (taping knife) in contact with the quartering device. Two straightedges may be used in lieu of the quartering device.
- 5.6** Slide or scoop the material into a sample pan. Repeat step 5.5 removing a similar amount of material from the opposite corner and repeat until all the samples for testing have been obtained.

Note 3 – When reducing the sample to test size it is advisable to take several small increments determining the mass each time until the proper minimum size is achieved. Unless the sample size is grossly in excess of the minimum or exceeds the maximum test size use the sample as reduced for the test.